AMENDMENT TO THE CLAIMS

Please amend the presently pending claims as follows:

1. (Currently Amended) An error correction coding method, comprising the steps of:

providing for at least two distinct sections of a predetermined elementary code, each section associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1) according to a vector of branch labels (b_0, b_1, b_2, b_3) defining a code word, two sections of said elementary code being distinct when the order and/or the role of the elements of said branch label vector are changed;

associating said sections to define a correction code; ~~and~~

generating coded data, by coding source data according to said correction code; and

transmitting the coded data to a transmission channel.

2. (Previously Presented) The coding method according to claim 1, wherein said step of providing comprises a step of partitioning the code words of said elementary code into four packets (s_0, s_1), (s_2, s_3), (b_0, b_1), (b_2, b_3) such that each code word, except the zero code word, comprises at least three lit packets out of four, wherein a packet is said to be lit when it comprises at least a bit of value 1.

3. (Previously Presented) The coding method according to claim 1, wherein said step of associating provides for an association in sequence of said elementary code sections, in order to form at least one coding trellis.

4. (Previously Presented) The coding method according to claim 3, wherein said at least one coding trellis is cyclic.

5. (Previously Presented) The coding method according to claim 3, wherein said step of

associating provides for two trellises, wherein the source data to be coded are entered in different orders.

6. (Previously Presented) The coding method according to claim 4, wherein said step of generating comprises a step of selecting a retained coding result, which is the coding result that has an arrival state identical with its starting state, among all the possible starting states for one of said elementary code sections, selected as started section.

7. (Previously Presented) The coding method according to claim 6, wherein said step of selecting selects a set of information and redundancy elements delivered by said at least one trellis.

8. (Previously Presented) The coding method according to claim 7, wherein said step of generating comprises a step of puncturing applied on said elements forming the retained coding result.

9. (Previously Presented) The coding method according to claim 1, comprising a step of puncturing at least one of said sections.

10. (Previously Presented) The coding method according to claim 9, wherein said step of puncturing delivers at least one left punctured section and at least one right punctured section.

11. (Previously Presented) The coding method according to claim 3, wherein said step of associating provides for at least two duplicated trellises in order to provide at least two coding sets interconnected via permutation means.

12. (Previously Presented) The coding method according to claim 11, wherein the method

comprises a step of shifting the data to be coded and a step of transmitting the shifted data to each of said coding sets.

13. (Previously Presented) The coding method according to claim 1, wherein said vectors comprise binary elements.

14. (Previously Presented) The coding method according to claim 13, wherein said elementary code is a Hamming [8,4,4] code.

15. (Previously Presented) The coding method according to claim 14, wherein said step of providing applies the following sections:

- H_i; (y_0, y_1, x_0, x_1) (b_0, b_1, b_2, b_3)
- H_i; (x_0, x_1, y_0, y_1) (b_0, b_1, b_2, b_3)
- H_i; (x_0, y_0, y_1, x_1) (b_0, b_1, b_2, b_3)
- H_i; (y_0, x_0, x_1, y_1) (b_0, b_1, b_2, b_3)
- H_i; (y_0, x_0, y_1, x_1) (b_0, b_1, b_2, b_3)
- H_i; (x_0, y_0, x_1, y_1) (b_0, b_1, b_2, b_3)

16. (Previously Presented) The coding method according to claim 10, wherein said step of providing applies the following punctured sections:

- H^0; $(*, *, x_0, x_1)$ $(*, *, b_2, b_3)$
- H^1; $(x_0, x_1, *, *)$, $(b_0, b_1, *, *)$

17. (Previously Presented) The coding method according to claim 11, wherein said step of providing provides for three coding sets each receiving 12 coding bits via an identity permutation, a 4 bit cyclic shift permutation and a 8 bit cyclic shift permutation, respectively.

18. (Previously Presented) The coding method according to claim 17, wherein said step of providing organizes said coding sets in order to produce a Golay [24,12,8] code.

19. (Previously Presented) The coding method according to claim 1, characterized wherein said step of providing provides for vectors comprising basic words which may assume 4 values.

20. (Previously Presented) The coding method according to claim 19, wherein said elementary code is a Nordstrom-Robinson code with parameters [8,4,6].

21. (Previously Presented) The coding method according to claim 1, wherein said step of providing provides for vectors comprising basic words which may assume 8 values.

22. (Previously Presented) The coding method according to claim 21, wherein said elementary code is a M[8,4] code.

23. (Currently Amended) The coding method according to claim 1, wherein it comprises a step of "~~turbocoding~~ turbo coding".

24. (Cancelled)

25. (Currently Amended) A method for decoding ~~coding data~~ comprising the steps of:

receiving coded data from a transmission channel;

providing for at least two distinct sections of a predetermined elementary code, each section associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1) according to a vector of branch labels (b_0, b_1, b_2, b_3) defining a code word, two sections of said elementary code being distinct when the order and/or the role of the elements of said branch label vector are changed;

associating said sections to define a correction code;

decoding the coded data according to said correction code; and

outputting the decoded data.

26. (Previously Presented) The decoding method according to claim 25, wherein said step of decoding is iterative.

27. (Previously Presented) The decoding method according to claim 26, wherein each iteration provides for a step of computing a posteriori probabilities on metrics associated with at least one trellis defined by said elementary code sections and a step of interrupting said iterations when a stable result is obtained and/or after a predetermined number of iterations.

28-29. (Cancelled)